

47. On some New or Little-known Species of Acari.

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(Text-figures 1-24.)

TRACHYTES? AUSTENI, sp. n. (Text-fig. 1.)

Deutonymph. Body about twice as long as wide. Dorsal shield undivided, covering the entire dorsal surface. It is furnished with a slight median longitudinal ridge and a lateral ridge on each side, these three ridges uniting at the anterior end of the dorsum. Tube of *peritreme* reaching forwards on to the dorsal surface above the coxa of the first leg, and then bending back again to form a short loop. There are a number of small round platelets, each bearing a hair situated laterally on the soft integument between dorsum and venter. A pair of similar platelets is also present on the little triangular cone in which the body terminates anteriorly. The ventral plates are not quite like those of *T. sumatrensis* Zacher; the large anterior one (called sternali-metasternali-genitale by Zacher) has the lateral projection on each side opposite the interval between the second and third coxae more angular than depicted by Zacher; whilst the *anal plate* is larger than in *T. sumatrensis*, almost touching the large anterior plate, and sometimes quite in contact with the coxal (metapodial), the latter being very well-developed. All the ventral plates are ornamented with minute spots, each composed of a group of punctations. Anterior ventral plate with five pairs of very short hairs. Anal plate with seven pairs of hairs, including two pairs situated near the anal aperture. Posteriorly there are several of the minute circular platelets, each carrying a short hair.

Length (including palpi) .48 mm.; *width* .22 mm.

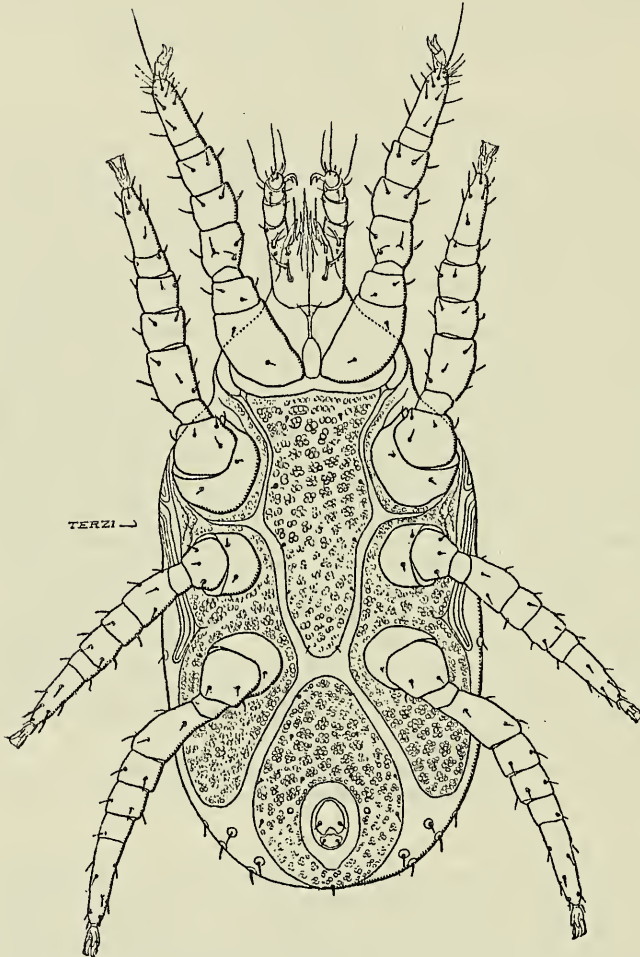
Host: A large fly (*Pantophthalmus tabaninus* Thunb.); Brazil.

LÆLAPS UGANDANUS, sp. n.

♀. A large and very strongly chitinized species. *Sternal plate* very like that of *L. muricola* Trägårdh and *L. giganteus* Berlese; faint reticular markings are present on its surface. *Genito-ventral plate* widely expanded behind the coxae as in *L. muricola*, etc.; apparently there are no linear markings on it. *Lateral platelet* near the last coxae much larger than is usually the case in the genus *Laelaps* and curiously shaped, ending in a sharp, almost spiniform point anteriorly; its surface is ornamented with a rather irregular network of linear markings. Paired hairs on *anal plate* slightly longer and also more slender than the unpaired

posterior hair. Hairs on venter numerous, most of them being short, but the lateral and posterior ones are somewhat longer; there are three pairs of quite long and fine hairs to the side of and behind the posterior end of the genito-ventral plate. Coxa

Text-figure 1.



Trachytes austeni, sp. n. Deutonymph. Ventral view.

of first leg with a short outer spine and a long inner seta, neither being stout. The spine or thorn on the second and third coxæ is not very thick; whilst that of the fourth coxa is short and quite slender.

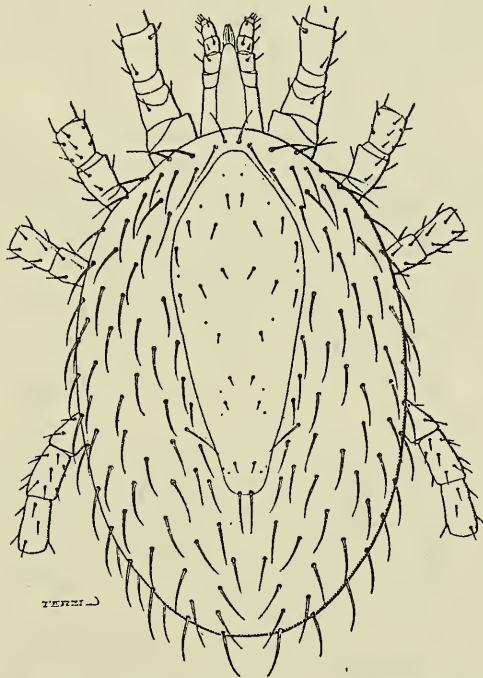
Measurements. Length of body (not including capitulum) 1820 μ ; its width 1290 μ . Length of sternal plate 440 μ ; its greatest width 420 μ , its least width 380 μ . Length of genito-ventral plate (including the operculum) about 760 μ ; its greatest width 590 μ . Length of lateral platelet 195 μ ; its width 142 μ .

Hab. Off a rodent, Bugwe, Bumungi, Uganda. Collected by W. N. van Someren (20. iv. 1922).

LIPONYSSUS GORDONENSIS, sp. n. (Text-figs. 2 & 3.)

♀. A single *dorsal shield* is present, being shaped as shown in text-figure 2. On the surface of this shield there are a number of very short fine hairs. In the anterior half these hairs are grouped together, but posteriorly they are fewer in number, apparently always being paired; the paired hairs at the extreme

Text-figure 2.

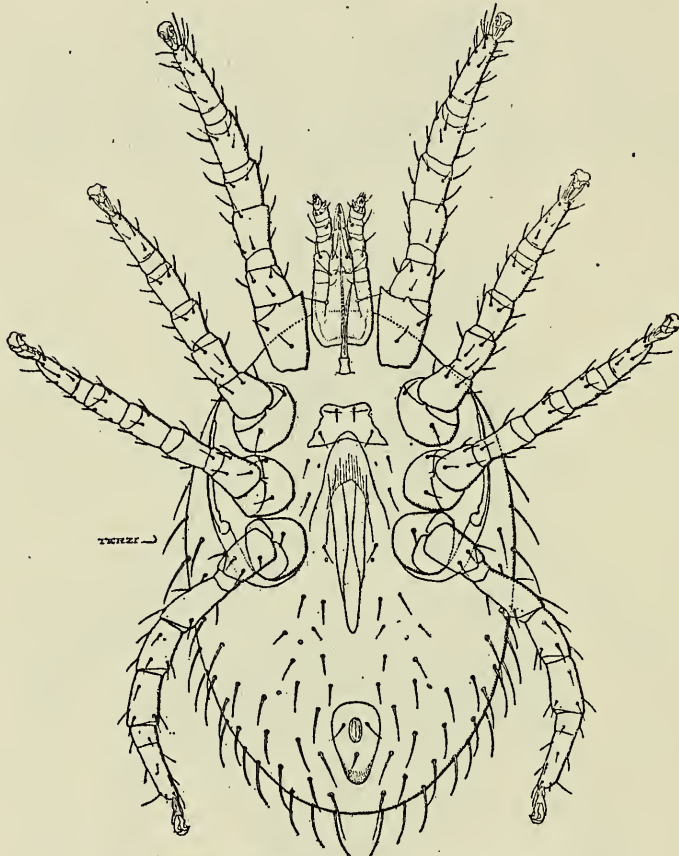


Liponyssus gordonensis, sp. n., ♀. Dorsal view.

posterior end of the dorsal shield are much longer than the others. Hairs on softer uncovered part of dorsum not very long, but much longer than those on the dorsal shield (except the terminal pair on the latter), and they are curved as in *L. saurorum*, etc. *Sternal plate* trapezoidal and only furnished with two pairs

of hairs; its posterior margin is not thickened. *Genito-ventral plate* narrow and its posterior end pointed. *Anal plate* pear-shaped and not so narrow as that of *L. saurorum*. Hairs on venter not very numerous, and much shorter and straighter than those on the dorsum. *Peritreme* extending as far forwards as the coxa of the second leg. Coxæ of legs without spurs. Legs

Text-figure 3.

*Liponyssus gordonensis*, sp. n., ♀. Ventral view.

furnished with numerous hairs, which are mostly slender, those on the ventral surface being very fine. There is a pair of somewhat thicker hairs or setæ on the dorsal surface of the femur of the first leg. *Chelicera* normal for the genus, its fingers not being provided with teeth.

Length (including palpi) .68-.95 mm.; *width* .35-.58 mm.

Host: A skink (*Mabuya quinquestriata* Lichtenstein); numerous specimens collected by the author on this host at Khartoum (Feb. 1923).

LIPONYSSUS SYLVIARUM Can. & Fanz.

Miss E. Knight, of the Lister Institute, has sent me a number of specimens of *L. sylviarum* found on hens at Bletsoe, Bedfordshire. The mites occur round the vents of the birds, and seem to multiply very rapidly. They form colonies, and do not leave the birds during the daytime, as is the habit of the common red mite of fowls (*Dermanyssus gallinæ* Redi). The tail-feathers, particularly the fluffy portion near the base, become covered with great numbers of mites. Later on, the parts of the skin attacked by the mites become raw, and a hard scab appears afterwards. Although previously found on Pigeons in this country, this is the first case of this mite becoming a pest of poultry here. In the United States a number of cases of *L. sylviarum* attacking hens are known, and it is regarded as a very injurious species, egg production of the infested birds being greatly reduced.

DERMANYSSUS (ALLODERMANYSSUS) SANGUINEUS Hirst.

This species was described from specimens found on *Rattus rattus* and other rodents in Egypt. It has also been recorded by Ewing as occurring in the United States (Proc. U.S. Nat. Mus. 1922, vol. 62, art. 13, p. 25). During February 1923, I collected a number of specimens of this mite from *Rattus alexandrinus* (grey-bellied form) and from *Mus musculus gentilis* at Khartoum, Sudan.

RHINONYSSUS (NEONYSSOIDES) NUCIFRAGÆ, sp. n. (Text-figs. 4 & 5.)

♀. Two large dorsal shields are present, covering practically the entire upper surface of the body instead of only a single anterior dorsal shield as in most species of *Rhinonyssus*. Apparently only one or two pairs of exceedingly short and inconspicuous hairs are visible on the dorsal shields; there are, however, also some very minute and inconspicuous circles on the shields; these minute circles no doubt represent the sockets of the hairs present in other forms. Hairs on *venter* also mostly obsolete or absent; when present they are exceedingly short and inconspicuous. *Sternal plate* indistinct. There is a clear space ventrally which probably represents the genito-ventral plate; it is wide and apparently rounded off posteriorly. *Anal plate* distinct and pear-shaped, bearing three very short hairs. *Peritreme* very short. Coxæ without spines or hairs, only minute circles being present. A few very short spinules occur on the proximal segments of the legs, and some longer fine hairs on their

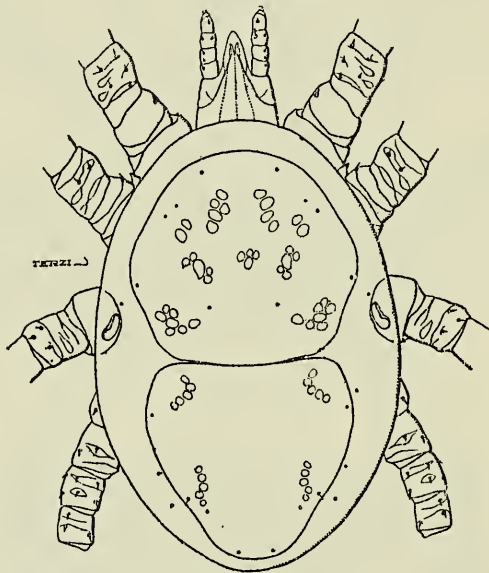
tarsi. There is also a fine hair on the dorsal surface of the penultimate segment of the anterior legs, and a fairly long and fine but rather stiff hair, which has its basal ring rather strong and conspicuous, is placed dorsally near the distal end of the tarsi.

♂. *Genital pore* anterior in position. *Anal plate* apparently narrower than in the female sex.

Measurements. ♀ : length (including palpi) .66-.70 mm.; width .39-.40 mm. ♂ : length (including palpi) .66 mm.; width .30 mm.

Host: *Nucifraga caryocatactes*; three female specimens collected by Herr Tischler at Heilsberg (5.ix.1913) and a male from Ulmenhorst (12.x.1911); Thienemann Coll.

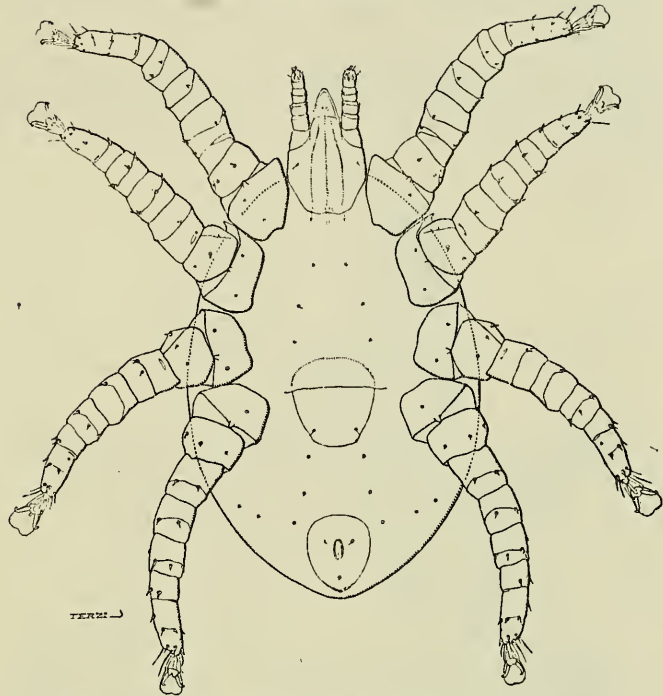
Text-figure 4.



Rhinonyssus (Neonyssoides) nucifragæ, sp. n., ♀. Dorsal view.

NOTE.—Owing to the presence of two dorsal shields instead of a single anterior one, as is usually the case in *Rhinonyssus*, it is necessary to place this species in a new subgenus—*Neonyssoides*. *Rhinonyssus (Neonyssoides) nucifragæ* resembles *Neonyssus intermedius* Hirst in having two dorsal shields and also most of the hairs replaced by minute circles, differing from the latter in the shape of the ventral plates, presence of distinct spinules on the legs, etc.

Text-figure 5.

*Rhinonyssus (Nconyssoides) nucifragæ*, sp. n., ♀. Ventral view.

*Key to the species of Ancylostropus present in the
British Museum Collection.*

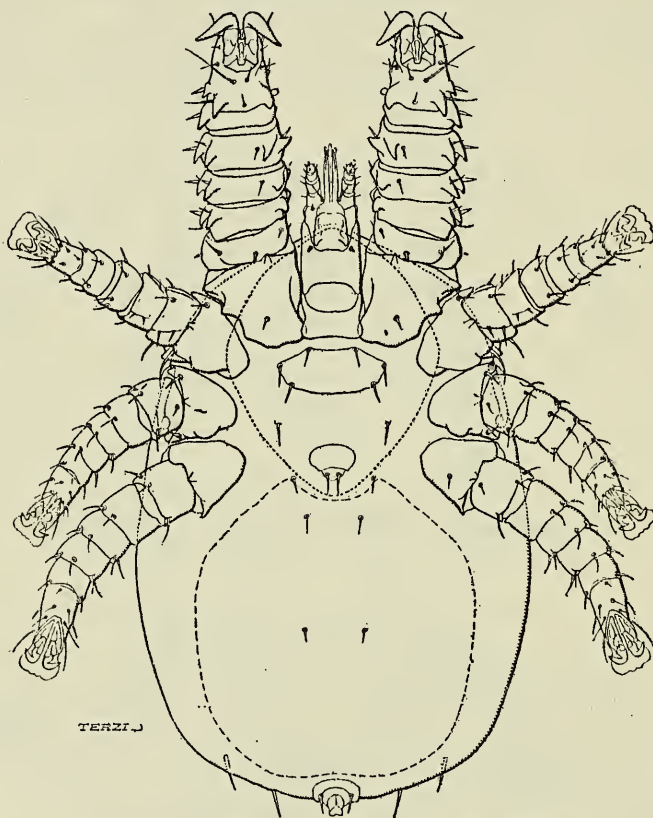
- | | | |
|----|--|---|
| 1. | { Pulvillus of legs obsolete or absent | 2. |
| | { Pulvillus of legs well-developed..... | 3. (Subgenus <i>Meristaspis</i>
Kolenati.) |
| | { Sternal plate much wider than long; the two rows
of dentiform processes on posterior surface of first
leg strongly developed | <i>A. zelebori</i> Kolenati. |
| 2. | { Sternal plate only slightly wider than long; the
two rows of processes on posterior surface of first
leg much weaker | <i>A. æthiopicus</i> , sp. n. ? |
| | { Posterior spurs of coxae obsolete. Hypostome short,
rather stout, the barbules unusually large | <i>A. macroglossi</i> , sp. n. |
| 3. | { Posterior spurs of coxae better developed. Hypo-
stome shaped otherwise | 4. |
| | { Posterior spur of first coxa long..... | <i>A. calcaratus</i> , sp. n. |
| 4. | { Posterior spur of first coxa much weaker | <i>A. lateralis</i> Kolenati. |

ANCYSTROPUS ZELEBORI Kolenati. (Text-fig. 6.)

Ancystropus zeleborii Kolenati, Parasiten der Chiropteren, 1856, p. 25.

♀. *Dorsal shield* not very long, and its posterior end is wider and blunter than in *A. lateralis*, etc. *Peritreme* very short, being restricted to the dorsal surface. There is a very strongly

Text-figure 6.



Ancystropus zelebori Kolenati, ♀. Ventral view.

chitinized structure at the base of the capitulum ventrally which seems identical with the *jugular plaque*, but it is coalesced laterally with the capitulum instead of being free; it has distinct and rather wide auriculæ posteriorly much as in some ticks. *Sternal plate* situated far forwards, being placed just behind the base of the capitulum; it is shorter than in the other known species of *Ancystropus*, being much wider than long.

Process on dorsal surface of *capitulum* well-developed and conical. Hypostome rather long and slender. First *leg* greatly enlarged; its claws very large; the pulvillus very much reduced in size, being obsolete. Lateral setæ of this leg shorter than in *A. lateralis*; there are two rows of strong backwardly-directed denticles on the posterior and postero-ventral surfaces of the first leg, also a few projections on the anterior (inner) surface, and one or two rather strong ventral tooth-like projections. First coxa with the spur on its posterior margin poorly developed; second and third coxæ each with a slight lobe-like spur posteriorly, these spurs being weaker than in *A. lateralis* and *A. calcaratus*.

Length of body (not including capitulum) .73 mm.; its width .51 mm.

Host: Kolenati states that either *Rhinopoma microphyllum* or else *Pteropus aegyptiacus* is the host of this species of mite. I have only seen a single example, ex Kolenati's collection.

ANCYSTROPUS ÆTHIOPICUS, sp. n. ? (Text-figs. 7 & 10 a & c.)

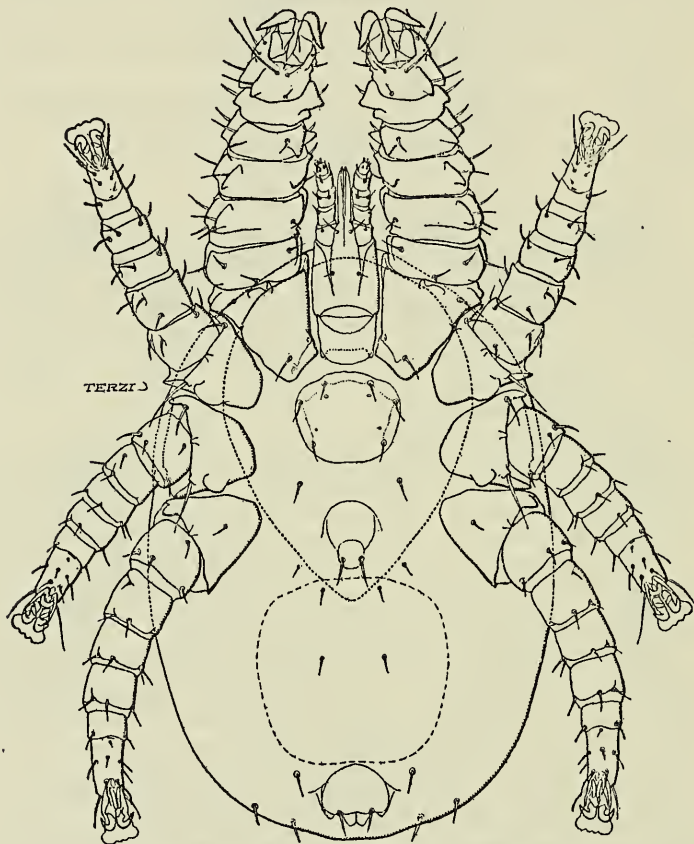
♀. Apparently the *dorsum* is not divided into two portions by a transverse line in this species. Dorsal shield (scutum) shaped as shown in text-fig. 7 (the dotted line). Hairs on anterior margin of dorsum very short. The pair of hairs present just behind the posterior end of the scutum in *A. lateralis* is missing in *A. æthiopicus*. *Sternal shield* larger than in *A. zezebori* Kolenati, and its shape is quite different. Process on dorsal surface of capitulum conical.

The strongly chitinated internal portion of the *jugular plate* varies considerably in shape in specimens of this mite from different localities; the posterior margin of this internal part is strongly concave in the examples from Damba Island, Lake Victoria, the posterior angles (auriculæ) being large and strongly produced; whereas in specimens from the Gambia the posterior margin is almost straight, the auriculæ being practically absent; the typical specimen from Zanzibar is rather intermediate in this respect, the posterior margin of this part of the plaque being somewhat concave with well-developed auriculæ. *Hypostome* slender and fairly long. *Palp* rather short and fairly stout. First *leg* much enlarged as in *A. zezebori*, but the backwardly-directed little chitinous processes on the posterior side of this limb are weaker than in that species; those of the lower row are sometimes distinct and dentiform, being especially well-developed in examples from Damba Island, Lake Victoria; but those of the upper row are quite weak; one or two of the processes on the anterior surface of this leg are large, however. Claws of first leg apparently rather smaller than in *A. zezebori*; the pulvillus obsolete. Posterior spur of first coxa obsolete; second and third coxæ each with a distinct lobe-like posterior spur; a weak pointed posterior spur may also be present on the fourth coxa. Hairs on dorsal surface of legs shorter and finer than in *A. lateralis* and also smoother, the accessory hairlets being obsolete.

Length of body (not including capitulum) .94 mm.; its width .65 mm.

Host: A fruit-bat (*Epomophorus minor*) from Zanzibar; a single specimen (the type) from this host. Also specimens probably referable to the same species of mite from the following hosts and localities:—*Micropteropus pusillus*, Gambia (*Dr. P. Rendall*). From a fruit-bat, Damba Island, Lake Victoria (*Dr. G. D. H. Carpenter*).

Text-figure 7.



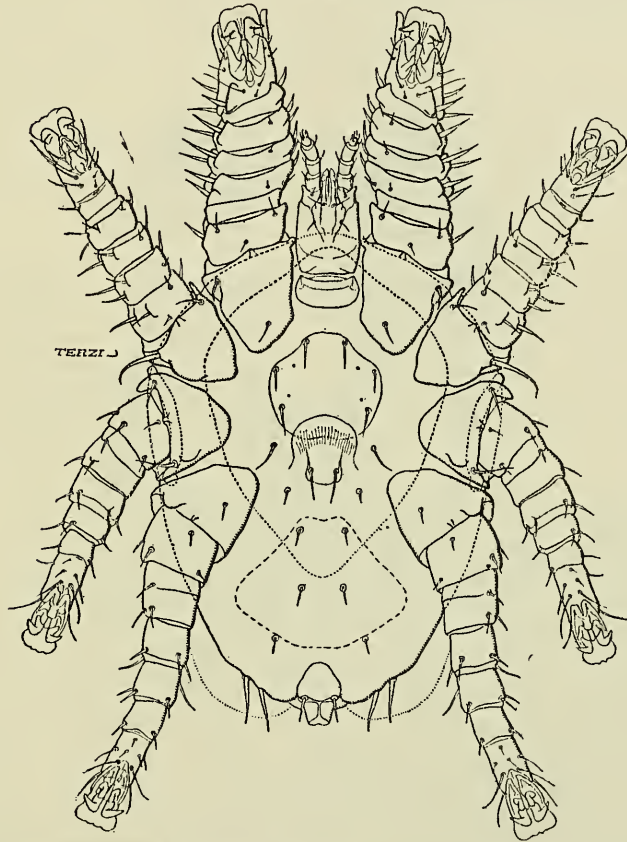
Ancystropus athiopicus, sp. n. ? ♀. Ventral view.

NOTE.—It is possible that Kolenati's *A. mulleri* from *Pteropus vulgaris* (= *Pteropus niger* ?) is allied to the species described above under the name *A. athiopicus* or perhaps even identical with it. The bat, *Pteropus vulgaris*, however, only occurs in the Mascarenes, Réunion, and Mauritius.

ANCYSTROPUS (MERISTASPIS) MACROGLOSSI, sp. n. (Text-figs. 8, 9, & 10 b.)

♀. Dorsal surface not divided into two divisions, but there is a short transverse line situated just behind the pointed posterior end of the *scutum*; the latter is shaped very much like that of *A. lateralis*. Number and distribution of hairs on dorsal surface

Text-figure 8.

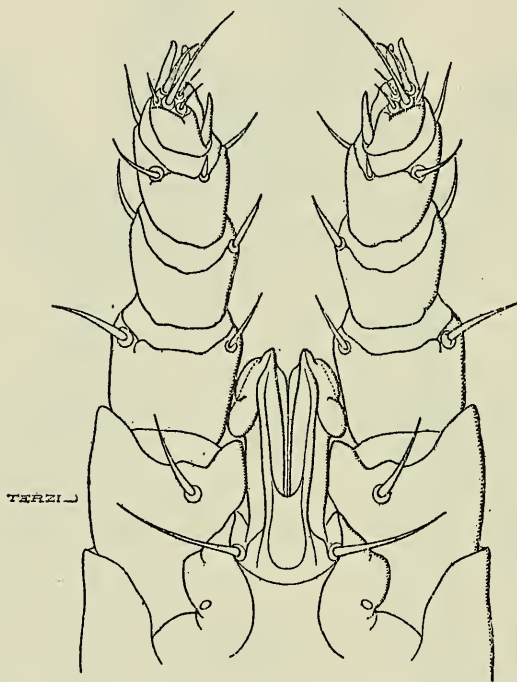


Ancystropus (Meristaspis) macroglossi, sp. n., ♀. Ventral view.

exactly the same as in *A. lateralis*. *Jugular plaque* well-developed and transversely elongated, being even wider than in *A. lateralis*. *Sternal plate* smooth and shaped as shown in text-fig. 8; there are three pairs of hairs on its surface and also the usual two pairs of minute punctations. *Genital operculum* situated just behind the sternal plate, its anterior margin overlapping the hinder margin

of the latter. *Genito-ventral plate* very similar to that of *A. lateralis* but wider, and furnished with a pair of hairs as in that species. Posteriorly there is also a somewhat triangular smooth area of the integument. Hairs on venter not numerous. There is a pair of hairs or setæ on each side of the posterior end of the body as in *A. lateralis*, but they are longer than in that species. Process on dorsal surface of *capitulum* stout and conical. Hypostome rather short, comparatively thick, and with the terminal barbules exceptionally well-developed. First (proximal)

Text-figure 9.



Ancystropus (Meristaspis) macroglossi, sp. n., ♀. Palpi and hypostome, greatly enlarged.

segment of *palp* with the outer angle projecting and almost tooth-like. First *leg* thickened much as in *A. lateralis*, and furnished with rather similar lateral setæ and a pair of paddle-shaped terminal setæ as in that species. The chitinous processes present on the posterior surface of the first leg in *A. lateralis* are obsolete in this new species, and those usually present on the inner surface are also obsolete or absent; the anterior edge of the ventral surface of each of the segments of this leg is concave, however,

and produced laterally so as to be almost dentate. Claw of first leg small; the pulvillus present. Some of the hairs on the dorsal surface of the legs are long. Hairs on ventral surface of legs very few in number. First coxa apparently without any posterior spur; the lobe-like spurs on the posterior margins of

Text-figure 10.



- a. Jugular plate of *Ancystropus athiopicus* (specimen from Zanzibar).
 b. Jugular plate of *Ancystropus macroglossi*.
 c. Jugular plate of *Ancystropus athiopicus* (specimen from Damba Island, Lake Victoria).

the second and third coxæ are very slight, being almost imperceptible.

Length of body (not including capitulum) .63 mm.; its width .54 mm.

Host: *Macroglossus minimus*; Gilolo.

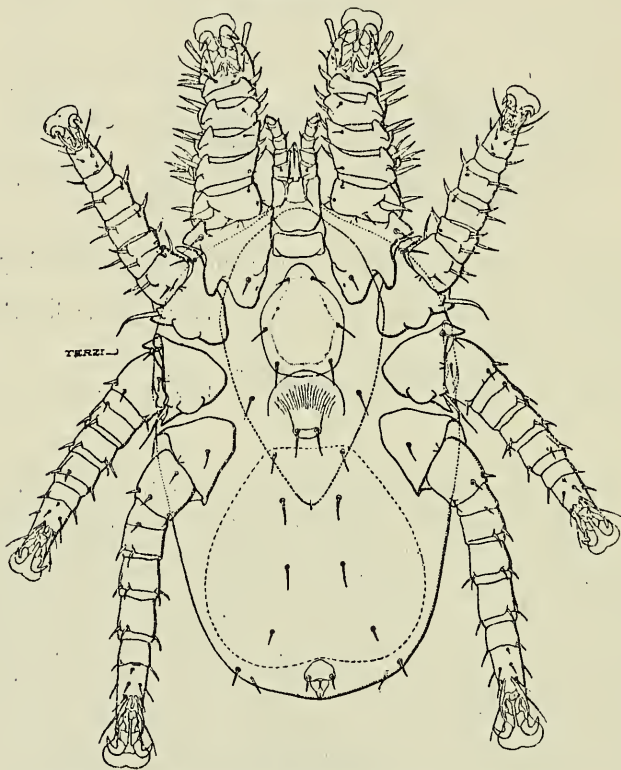
We have only a single specimen of this new mite in the collection.

ANCYSTROPUS (MERISTASPIS) CALCARATUS, sp. n. (Text-fig. 11.)

♀. The whole dorsal surface is rather strongly chitinized, and it is difficult therefore to see the outline of the scutum itself. There are a number of shallow pits on the surface of the scutum. Chætotaxy of dorsum much as in *A. lateralis*, but the hairs seem shorter. Process on dorsal surface of *capitulum* rounded instead of conical as in *A. lateralis*, etc. *Jugular plaque* strongly chitinized and elongated transversely, being much wider than long. *Sternal plate* almost flask-shaped, for it is roughly oval in shape, with a short anterior neck-like portion. It is smooth, being without markings, except for two pairs of minute punctations, and there are three pairs of hairs on it. *Genito-ventral plate* very short, rounded off posteriorly and bearing a pair of hairs. Hairs on *venter* very sparse as in *A. lateralis*, and although quite short they are longer than in that species. In unmounted specimens there is sometimes a slight but noticeable swelling on each side of the venter just before the posterior end of the body. Paired spines or hairs at posterior end of body minute and inconspicuous, being much smaller than in *P. lateralis*. First leg enlarged; the lateral setæ are very like those of *A. lateralis*, and there is a terminal pair of paddle-shaped setæ as in that species.

Denticles on postero-ventral surface of this leg also very like those of *A. lateralis*, but stronger, the anterior margin of the ventral surface of the segments of this leg being strongly concave. There is a stout spinule ventrally on each side of the distal end of the first tarsus, close to the origin of the claws. Claws of first leg not very large; the pulvillus present. Spur on coxa of first leg much longer than in the other known species of the genus. Second and third coxæ each with a lobe-like posterior spur.

Text-figure 11.

*Ancystropus (Meristaspis) calcaratus*, sp. n., ♀. Ventral view.

There are a number of rather long hairs on the dorsal surface of the legs; a pair on the femur of the first leg is the longest, the outer hair being the longer of the two.

Length of body (not including capitulum) .70—about .94 mm.; its width .53–.61 mm.

Host: A large flying-fox (*Pteropus* sp.); Rook Island, August 1913 (*A. S. Meek*), ex Hon. N. C. Rothschild's coll.

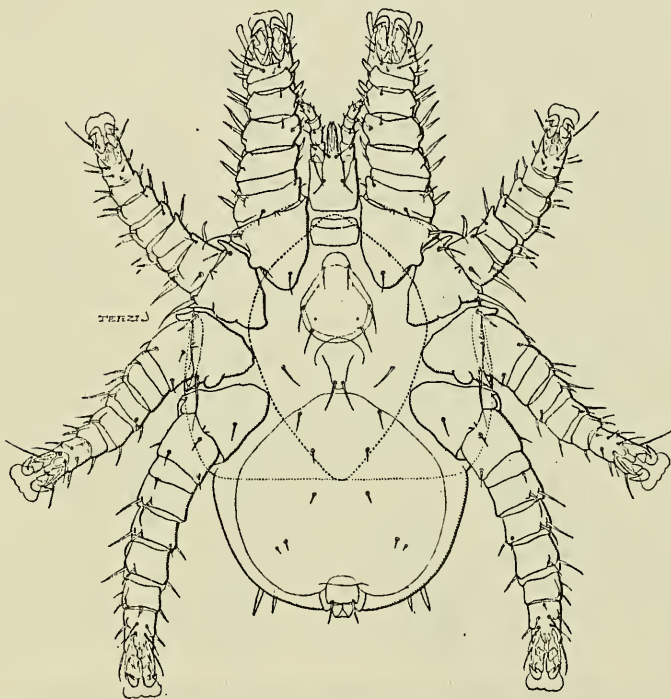
ANCYSTROPUS (MERISTASPIS) LATERALIS Kolenati. (Text-figs. 12 & 13.)

Pteropus lateralis Kolenati, Parasiten der Chiropteren, 1856, p. 29.

Meristaspis lateralis Kolenati, Sitzb. K. Ak. Wien, 1858, xxxiii. p. 84.

♀. *Dorsum* divided into a large anterior and a shorter posterior portion by a well-defined transverse line, situated just above and behind the last pair of legs. *Dorsal shield* ill-defined,

Text-figure 12.



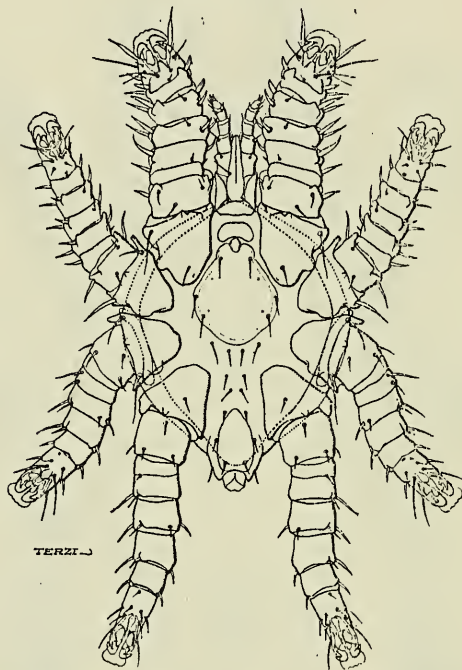
Ancystropus (Meristaspis) lateralis Kolenati, ♀. Ventral view.

but shaped as shown in text-fig. 12, the posterior end being rather sharply pointed. This shield reaches backwards as far as the transverse line. Hairs on dorsum short and few in number; there are several hairs near the anterior and antero-lateral margin, viz. a median pair and three hairs on each side a little further back, also a hair on each side opposite the gap between the third and fourth legs. On each side of the pointed posterior end of the scutum there is a short hair. There is also a pair of

very short hairs a little behind the middle of the posterior part of the dorsum. Apparently there are no hairs on the scutum itself, only minute punctations. Process on dorsal surface of capitulum conical, pointed, and backwardly directed.

...*Jugular plaque* well-developed, being strongly chitinized, much wider than long, and practically rectangular. *Sternal plate* shaped as shown in figure; it is very like that of some species of *Spinturnix*, the anterior end being narrowed; this plate has a narrow marginal strip of paler and weaker chitin; the surface is smooth, being without any markings, except two pairs of minute

Text-figure 13.



Ancystropus (Meristaspis) lateralis Kolenati, ♂. Ventral view.

punctations; there are three pairs of marginal hairs. Hairs on *venter* very few in number; there is a pair on the hinder margin of the minute *genito-ventral plate*. Behind this plate on the rest of the venter there are only four or five pairs of very short hairs, and they are well separated from one another. Part of the venter is very smooth, being devoid of the usual linear markings, and perhaps this area represents an obsolete plate. On each side at the posterior end of the body there is a pair of characteristic rather stout stiff setæ. *Hypostome* slender, the terminal barbules

fairly well-developed. First pair of legs greatly enlarged, much as in *A. zelebori*; the lateral setæ of this leg much better developed than in that species, being rather stout and projecting sideways and slightly forwards; on each side of the distal end of this leg there is a paddle-shaped seta, its tip being flattened and truncated. At the base of each of the lateral setæ there is a curious projection ending both proximally and distally in an angular process or tooth, partly formed or at least accentuated by the concave distal margin of the ventral surface of the segment. Similar projections may occur also on the inner surface of the first leg. The upper lateral row of denticles present in *A. zelebori* seems to be absent in the present species and also in *A. calcaratus*, sp. n. Claws of first leg not very large; pulvillus present. Coxæ 1-3 each with a lobe-like spur on the posterior margin. A pair of very long hairs is present dorsally on the femur of the first leg and another shorter pair on the patella; similar but shorter hairs are also present on the same segments of the second and third legs; the trochanter of the third leg also has a rather long dorsal hair. A rather long dorsal hair is present also on the trochanter, femur, patella, and tibia of the fourth leg. All these long hairs have very minute accessory spinules or hairlets, causing them to have a slightly roughened appearance. Lateral hairs of legs stiff, plain, and not very long.

♂. *Scutum* covering the entire dorsal surface. *Jugular plaque* with the posterior margin somewhat concave. *Sternal plate* very like that of the female, but with the usual anterior genital pore. The pair of hairs at the distal end of the tarsus of the first leg are not paddle-shaped, their tips being finely pointed. Spurs on coxæ not so well-developed as in the female.

♀. *Length* of body (not including capitulum) .70-.79 mm.; its width .53-.56 mm.

♂. *Length* of body (not including capitulum) .50 mm.

Host: A fruit-bat (*Roussettus egyptiacus*). I have examined the cotype deposited in the Brit. Mus. Collection by Kolenati; also specimens from Rehoboth and Jaffa, Palestine, Jan. 1912 and Feb. 1920 (*J. Aharoni*), and examples from Cyprus, collected by Miss D. M. A. Bate.

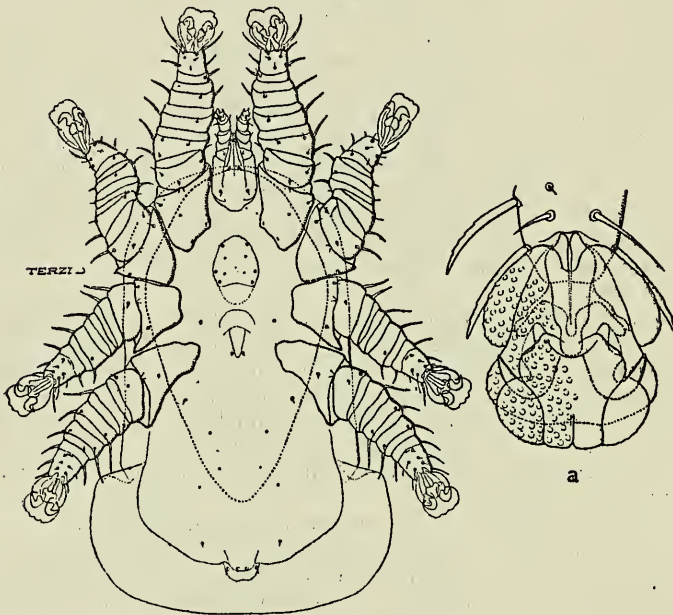
PERIGLISCHRUS INTERRUPTUS Kolenati. (Text-figs. 14 & 15.)

Pteroptus interruptus Kolenati, Die Parasiten der Chiropteren, 1856, p. 29; *Pteroptus hipposideros* Kolenati, t. c. p. 29; *Periglischrus interruptus* Kolenati, Sitzb. K. Ak. Wiss. Wien, 1858, xxxiii. p. 80; *Periglischrus hipposideros* Kolenati, t. c. p. 82; *Periglischrus glutinimargo* Kolenati?, t. c. p. 80.

♀. A small species with the posterior end peculiar in shape, being wider than the rest of the body and flattened dorso-ventrally, forming a kind of rim. The weak *sternal plate* apparently has no hairs on its surface, but there are three pairs

of minute circles on it near the lateral margins, and sometimes also two additional pairs of rather indistinct circles situated nearer the middle of the plate. *Genital operculum* very small and situated between the third coxæ. *Genito-ventral plate* very small, narrow and wedge-shaped in outline, the posterior end being pointed. *Peritreme* very short. Hairs on venter few in number and exceedingly minute and inconspicuous. There is a pair just behind the posterior end of the genito-ventral plate and also three pairs at the posterior end of the venter. There are also a

Text-figure 14.



Periglischrus interruptus Kolenati, ♀. Ventral view.

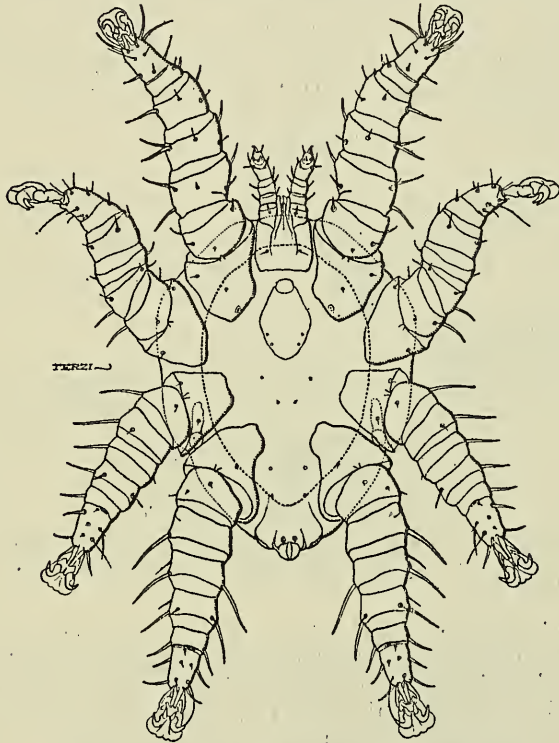
a. End of tarsus of leg of same showing pulvillus.

number of minute circles which do not seem to be provided with hairs. Coxæ of legs without spurs; they are rather curiously shaped (see text-fig. 14), the outer posterior angle of the third coxa being strongly chitinized and projecting somewhat, whilst the same part of the fourth coxa forms a long narrow strip. Numerous hairs and setæ of moderate length are present on the dorsal surface of the legs, including a noticeably long hair on the femur and another on the patella of the first leg. Ventral surface of legs almost hairless, except the tarsi which bear a number of hairs. Pulvillus of legs peculiar in shape; there is a

well-developed additional lobe or expansion on each side of the basal support of the claws, besides the usual terminal lobes (text-fig. 14 a).

♂. Sternal plate shaped as shown in figure; there are two pairs of minute circles situated near the lateral margins posteriorly. Hairs on venter either short or replaced by minute circles. Coxæ without spurs. The two modified setæ placed near the distal end of the penultimate segment of the palp are quite long.

Text-figure 15.



Periglischrus interruptus Kolenati, ♂. Ventral view.

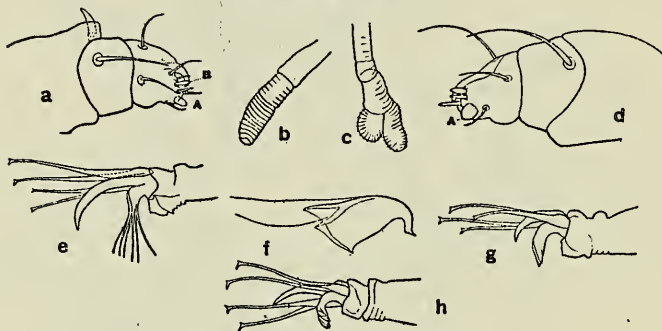
Hosts and localities. Kolenati gives *Rhinolophus clivosus* [= *R. blasii*] as the host of *Periglischrus interruptus* in his 'Parasiten der Chiropteren,' but later in Sitzb. Ak. Wiss. Wien gives *R. euryale*, allotting a new name—*P. glutinimargo*—to a mite of this genus from Egyptian specimens of *R. clivosus*. In addition to Kolenati's cotypes of *P. interruptus* and *P. hipposideros*, the British Museum possesses examples from *Rhinolophus*

euryale, Grotto of Pietralbello, Pontelecchia, Corsica (collected by S. Hirst, 17. iii. 1922), and from the same host at Ajaccio (S. Hirst, 5. iii. 1922).

PARATETRANYCHUS INDICUS, sp. n. (Text-fig. 16.)

♂. *Palp* with the terminal finger (A in text-fig. 16 *a*) stout, but rather short, being shorter than the stiff rod-like setæ situated near it. Dorsal sensory finger (B in text-fig. 16 *a*) club-shaped and about as long as the terminal finger. When seen from the side, the ventral part of the claws of the anterior *legs* seems to be a strong curved claw-like process, but if examined carefully, it is seen to be subdivided into several parallel teeth, which are rather stout in the case of the first leg, those of the second leg being weaker. Ventral part of claw of posterior legs

Text-figure 16.



Paratetranychus indicus, sp. n.

a. Palp of male. *b* & *c.* End of collar trachea showing variation in shape. *d.* Palp of female. *e.* Claw of posterior leg of male. *f.* Penis. *g* & *h.* Claws of anterior legs of male.

divided into six quite fine hairs as in all the legs of the female sex; the dorsal claw-like part is longer than in the anterior legs. The hard chitinized part of the *penis* is short and strongly curved, its end being shaped rather like that of *T. telarius* (= *T. althaeae* of Hanstein, Zacher, and some other recent authors), one of the barbs being quite weak.

♀. *Body* elongate-oval, the body + the head-plate being about twice the greatest width of the former. Terminal finger of palp (labelled A in figure *d*) of female short and very wide. Collar trachea normally ending in a single elongated terminal cell (text-fig. 16 *b*); in one specimen, however, the end consists of two cells lying side by side, one being more elongated than the other (text-fig. 16 *c*). Claws of legs of female similar to the posterior ones of the male, consisting of a long slender

dorsal part and a ventral projecting portion split into six fine hairs.

Measurements. ♂ : length (including palpi) .33 mm.; greatest width .147 mm. ♀ : length (including palpi) .51-.54 mm.; greatest width .235 mm.

Host-plant: Sorghum, India. Mr. Y. Ramachandra Rao, of the Coimbatore Agricultural College, informs me that this mite is sometimes a serious pest of Sorghum or cholam (*Andropogon sorghum*). It is found in large colonies under the surface of the leaves and increases rapidly in numbers. The attacked portions turn bright red as if attacked by rust. The mite is greyish green in colour when alive.

TETRANYCHUS CRATÆGI Hirst.

F. Zacher asserts (Mitt. Biol. Reichs. f. Land- u. Forst. Berlin, Heft 21, Dec. 1921, p. 91) that the species of Red Spider described by myself under the name *Tetranychus cratægi* is a synonym of his *Tetranychus viennensis*. The description of *T. cratægi* was published in the Proc. Zool. Soc. July 1920, whereas that of *T. viennensis* was published in Zeitschr. angew. Entom. Berlin, vii. No. 1, September 1920. It will be seen that *T. cratægi* has the priority and that *T. viennensis* is the synonym. It is true that Zacher had circulated an earlier typewritten document which does not bear the impression or stamp of any Society or publisher, nor even the name of the place at which it was issued. It bears the date "17. Mai 1920" and is entitled "Vorläufige Diagnosen einiger neuer Spinnmilbenarten." There are several corrections in pencil in the copy in my possession. It is quite evident that this document does not constitute publication and that the three new species mentioned in it are not valid; in fact, it would seem that Zacher realises that this is so himself, for he redescribes all three species as new at a later date in Zeitschr. angew. Entom. Berlin, as mentioned above.

ANYCHUS LATUS Can. & Fanz. ? (Text-figs. 17 & 18.)

♂. Collar tracheæ of a simple type (see text-fig. 17 *d*), ending in a single long cell. Hairs or setæ on dorsum twenty-six in number (not including the finer hairs near the anus); these dorsal hairs are stiff, being rod-like and slightly pectinated. Penis shaped as shown in figure, being strongly curved and claw-like. *Palp* with the terminal sensory finger represented by a conical spine, which is only about half the size of the two usual stiff red-like setæ present close to it; dorsal sensory finger short and slender.

Tarsi of *legs* apparently without any claw, but the usual tenent hairs, which are four in number in the male of this species, are present, being situated on a short peduncle. Besides the ordinary rather long and slightly-feathered hairs on the legs, there are a

few modified and sensory hairs. Dorsally near the apex of the tarsi there is a curved hair or seta with the end enlarged, being flattened and pectinated. There appears to be only one of these hairs on the anterior tarsi, but there are two on the third tarsus. There are several short, stiff curved rod-like sensory hairs (sinneskolben) at the distal end of the anterior tarsi; four of these sensory setæ are also present on the penultimate segment of the first leg, two dorso-lateral ones posteriorly and another anteriorly, and one ventral in position. Besides the short distal sensory setæ on the second tarsus, there is also one rather near the proximal end; whilst there are two on the penultimate segment of this leg. Tarsus and also the penultimate segment of the posterior legs each usually with a short, stiff sensory seta near the proximal end, but that on the penultimate segment of the fourth leg may be absent.

Text-figure 17.

*Anychus latus* Can. & Fanz.?

a. Penis. b. Palp of female. c. Palp of male. d. End of collar trachea.

e & f. Penis. g. End of a leg.

♀. Terminal sensory finger of palp fairly well-developed, being peg-shaped and almost as long as the longer of the two rod-like setæ situated close to it. Dorsal sensory finger not very long, but slender and practically cylindrical.

♂. *Length* of body (including palpi) ·375 mm.; its greatest width ·192 mm.

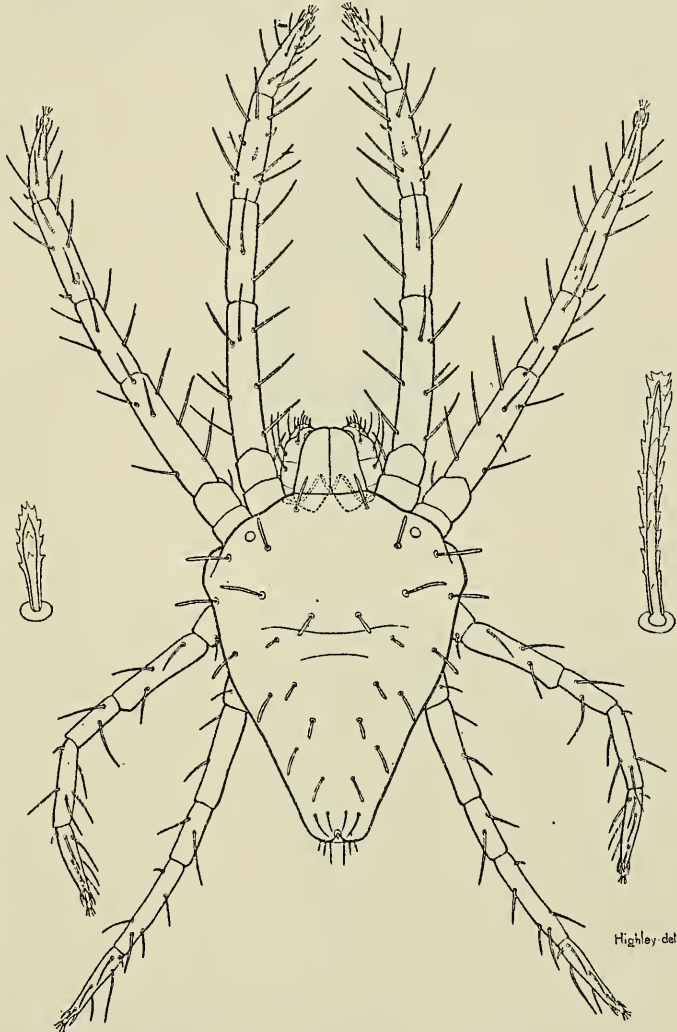
♀. *Length* of body (including palpi) ·437 mm.; its greatest width ·304 mm.

Plant-hosts: Lebbek-trees at Wadi Halfa; specimens collected by S. Hirst (25.i.1923). Also specimens from a leguminous tree or shrub at Makwar, near Sennar, Blue Nile, Sudan (9.ii.1923), collected by S. Hirst.

NOTE.—The finer structural details are not all given in Canestrini's and Berlese's figures of *A. latus*, so that I have some doubt in referring my specimens from North Africa to this

species, but I think that this identification will prove to be correct. It is possibly also the same as the mite mentioned by F. C. Willcocks under the name *Bryobia* sp. (Lebbek Red Spider).

Text-figure 18.



Anychus latus Can. & Fanz., ♂. Dorsal view.

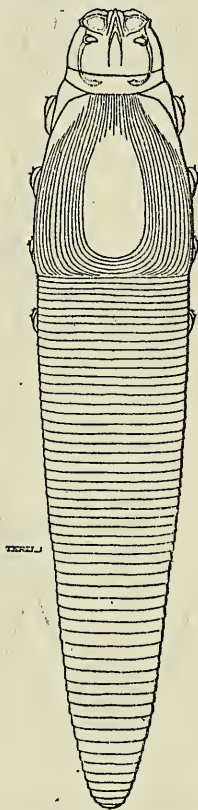
in his "Survey of the More Important Economic Insects and Mites of Egypt," Bulletin No. 1, Sultanic Agricultural Society, p. 266 (1922).

DEMODEX SCIURINUS, sp. n. (Text-fig. 19.)

Variety of *D. melesinus*?

♀. Body about five times as long as the greatest width of the cephalothorax. Abdomen longer than the combined length of capitulum and cephalothorax. Capitulum not much wider than long. Striations on dorsal surface apparently all longitudinal in direction, the convoluted pattern present in *D. melesinus*

Text-figure 19.



Demodex sciurinus, sp. n., ♀. Dorsal view.

apparently being absent. Spinules on capitulum very minute as in *D. folliculorum* and *D. melesinus*, but not so short as in the latter. Distal part of capitulum sharply angular and salient laterally.

Measurements. Total length of body 165μ ; length of cephalothorax and capitulum 67μ ; of abdomen 98μ . Greatest width

of cephalothorax 33μ ; of abdomen 29μ ; of capitulum (at base) 22μ ; length of capitulum 18μ .

Host: Brown Squirrel (*Sciurus vulgaris*). A specimen of this mite was collected from a squirrel received from Inverness, 21. iv. 1922.

TARSONEMUS TRANSLUCENS Green.

This mite has already been recorded as occurring on tea in Ceylon and India, and also described by myself from specimens found on *Capsicum* in Trinidad (*F. W. Urich Coll.*). Professor G. S. Kulkarni has brought to the Museum specimens found on potatoes at Poona. He states (*Agric. Journ. India*, vol. xvii. part 1, Jan. 1922, pp. 51-54) that this mite is the cause of the very serious "*Murda*" disease of Chilli (*Capsicum*) and also of the "*Tumbera*" disease of potatoes in India.

TARSONEMELLA, subgen. nov.

Closely allied to *Tarsonemus*, but the legs of the first pair stouter than the others and without pulvillus. Also the pseudo-stigma normally present between the first two pairs of legs in *Tarsonemus* is absent. Fourth leg of female modified in a similar way to that of the typical *Tarsonemus*, the terminal segments being attenuated and ending in a long hair.

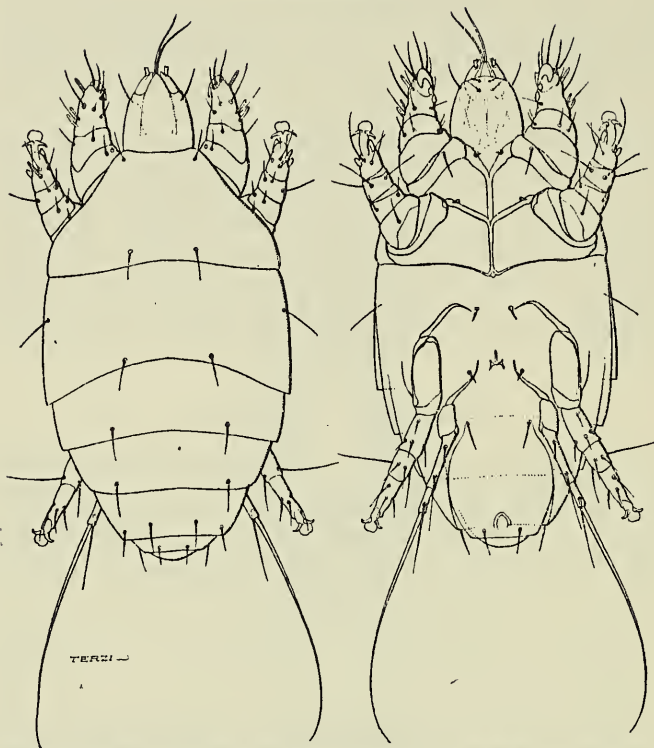
TARSONEMUS (TARSONEMELLA) AFRICANUS, sp. n. (Text-figs. 20 & 21.)

♀. Shape rather elongate-oval, the body being much longer than wide. Tarsus of first leg with a well-developed but not very large claw, which is slender, curved, and sharply pointed. Dorsolaterally near the distal end of this tarsus there is a slender, striated cylindrical seta of fair length, and near the middle there are two similar but smaller setae, one of which is very slightly clavate. Two or three stiff hairs with broken-off ends like those present on the same segment in *Pseudotarsonemoides spiritalis*, sp. n., also occur on the first tarsus. Tarsus of the second leg with a striated seta dorsally of about the same size as the longest one on the first tarsus, and also a shorter and stouter seta on its posterior side. Tarsus of second and third leg with a pulvillus and paired claws. Hairs on body short, especially the ventral ones; owing to the fact that the specimens of this mite are mounted in balsam, it is difficult to be certain of the exact number and distribution of these hairs.

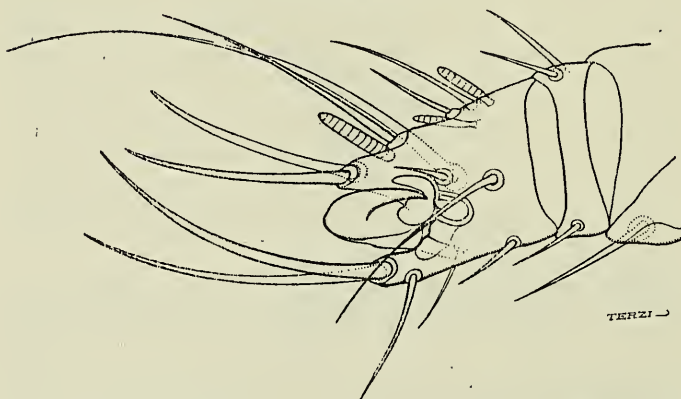
Length (including capitulum) 200μ .

Host: A hymenopterous insect (*Agaon xystrum* Waterston); from Koforidua, Gold Coast (4. iv. 1921).

Text-figure 20.

*Tarsonemus (Tarsonemella) africanus*, sp. n., ♀. Dorsal and ventral views.

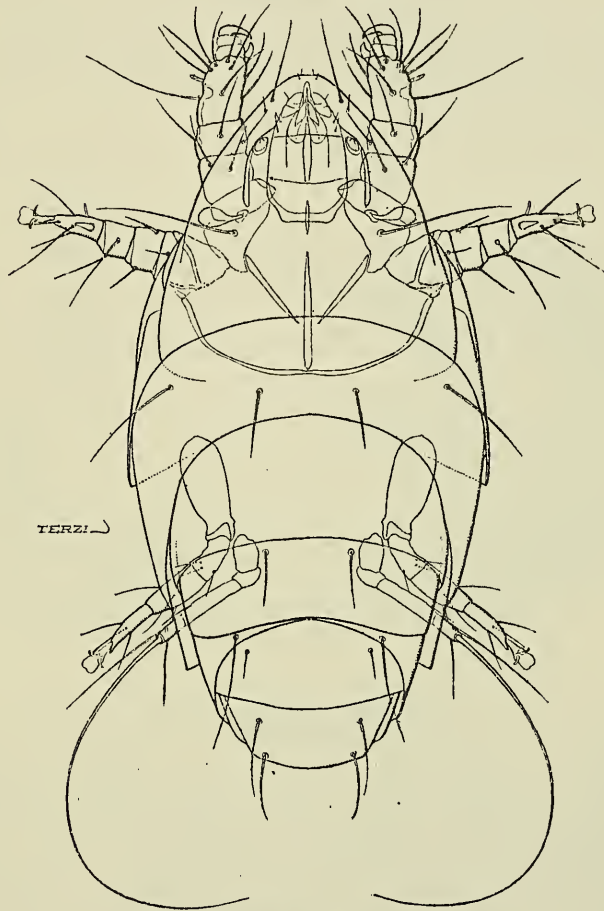
Text-figure 21.

*Tarsonemus (Tarsonemella) africanus*, sp. n., ♀. Terminal segments of first leg greatly enlarged.

Pseudotarsonemoides spinitarsus, sp. n. (Text-figs. 22 & 23.)

♀. The usual two little scars (representing accessory stigmata?) are minute and oval in shape, being situated widely apart from one another not far from the lateral margin of the conical anterior prolongation of the cephalothorax. Pseudostigmata

Text-figure 22.

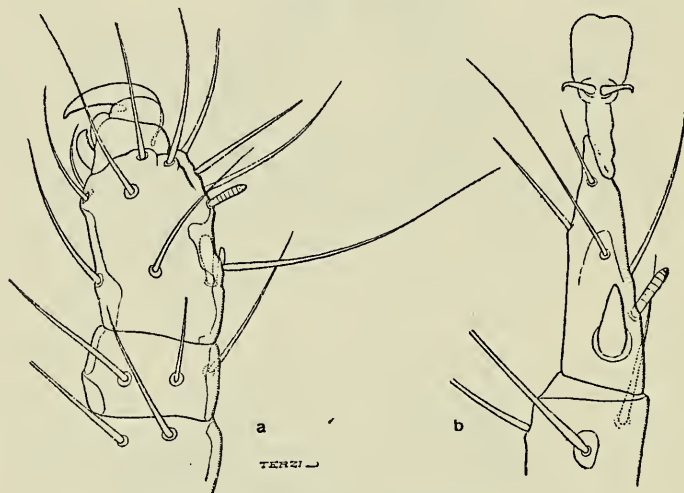


Pseudotarsonemoides spinitarsus, sp. n., ♀.

oval in shape and furnished with very fine short hairs. There is a hair on the dorsum behind the pseudostigma. A transverse row of four fine hairs is present on the dorsal surface of the first abdominal segment. Second abdominal segment apparently

without any hairs dorsally. Third abdominal segment with a pair of dorsal hairs. Fourth abdominal segment with two pairs of hairs, the inner ones being much shorter than the outer, exactly as in *P. eccoptogasteris*. The paired lateral epimeral structures lying between the first two legs are not joined to the central linear (longitudinal) chitinous structure (Vitzthum's figure of the ventral surface of *P. eccoptogasteris* shows these lateral epimera joined to the longitudinal central chitinous structure). First leg slightly enlarged; its claw well-developed, but not very large and moving against a short, stout curved spinule. There are a few fine hairs of ordinary type, including a long fine hair near the middle of the dorsal surface, on the first

Text-figure 23.

*Pseudotarsonemoides spinitarsus*, sp. n., ♀.

a. Terminal segments of first leg.

b. Tarsus of second leg.

tarsus. Three of the hairs are blunt, having the broken-off appearance characteristic of certain hairs also present in Tyroglyphid mites. There also seem to be three sensory setae (sinneskolben) on the first tarsus; the one nearest the distal end is cylindrical, and projects almost at a right angle to the segment; the other two sensory setae lie parallel to the tarsus, one of them being stout and club-shaped, the other slender and difficult to see. Tarsus of second leg with a slender sensory seta (sinneskolbe) similar to that present on the first tarsus; there is also a strong dorso-lateral spinule on the second tarsus (see text-fig. 23 b).

Length of body (including capitulum) 267 μ ; its width 135 μ .

Host: The Elm-bark Beetle (*Scolytus destructor*); a single female specimen found on the larva of this beetle at Kew, 19. x. 1922 (*R. C. Fisher*).

NOTE.—This species seems to differ from Vitzthum's *P. eccoptogasteris* in having a stout spinule on the dorsal surface of the second tarsus.

LISTROPHOROIDES, gen. nov.

Body flattened dorso-ventrally instead of laterally, as is the case in the genus *Listrophorus*, etc. All legs with a sucker or pulvillus, that of the first leg being minute and that of the other legs small also. Terminal segments of first and second legs grooved ventrally, the sides of the groove being provided with little knobs and processes for gripping the hair of the host.

LISTROPHOROIDES ÆTHIOPICUS, sp. n. (Text-fig. 24 a.)

♂. *Body* moderately elongated. *Capitulum* shaped rather like that of a louse, being roughly triangular but with the lateral angles salient; it is short and wide. *Posterior end* of body in this sex sometimes expanded and almost lobe-shaped as shown in text-fig. 24 a; in other specimens the sides of the posterior end of the body are straighter (but this is perhaps due to distortion through shrinkage). There are three pairs of hairs on the posterior end of the body, but they are inconspicuous, two pairs being very short and fine, and the remaining pair not very long. Anal suckers not distinct. Tarsi of anterior legs short and modified as described above; the tarsi of the posterior legs are rather long and fairly slender, but the other segments of these limbs are rather stout. Posterior margin of third coxa furnished with two blunt spurs, the inner one being fairly large.

Length (including capitulum) 450 μ ; width 187 μ .

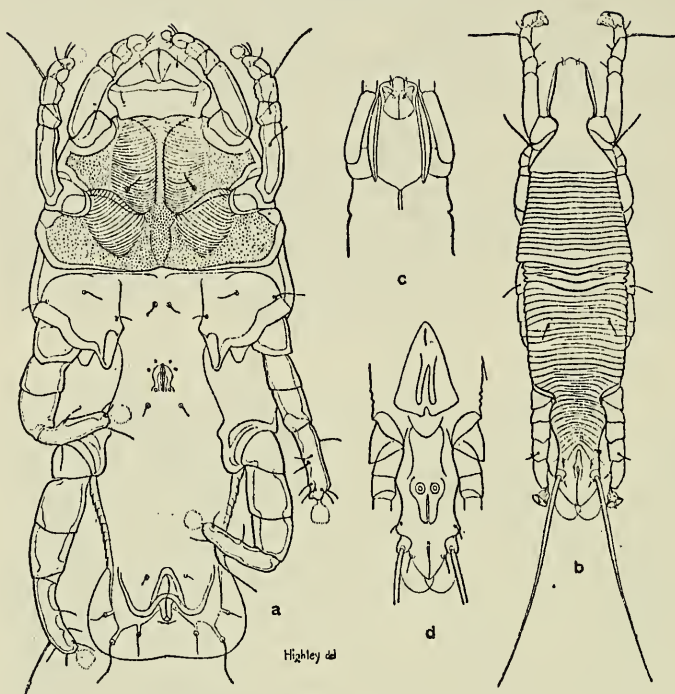
Host: *Cricetomys gambianus*; Accra (*Scott-Macfie Coll.*).

LISTROPHORUS BOTHÆ, sp. n. (Text-fig. 24 b, c, d.)

♂. *Body* narrow and elongated, being about four times as long as wide. *Capitulum* also elongated and rather narrow; its front margin shaped as shown in text-fig. 24 c, being only slightly prominent in the middle. Posterior end of abdomen shaped as shown in figure, terminating in a pair of very delicate lobe-shaped laminae. Just in front of these lobe-like structures there is a more strongly chitinized curved line, which is probably the real posterior margin of the body. A pair of long hairs spring from the posterior end of the body. Anal suckers distinct but small, and rounded in outline. Tarsus of first and second leg furnished with two hairs with blunt ends, one of them being rather long.

♀. *Body* also elongated as in the male. Unfortunately our female specimens are not well mounted, and therefore cannot be described.

Text-figure 24.



a. *Listrophoroides aethiopicus*, gen. & sp. n., ♂. Ventral view.

b. *Listrophorus bothae*, sp. n., ♂. Dorsal view.

c. Ventral view of anterior extremity of *Listrophorus bothae*, ♂.

d. Ventral view of posterior extremity of *Listrophorus bothae*, ♂.

♂. Length (including capitulum but not long posterior hairs) 380 μ . Greatest width 93 μ .

♀. Length (including capitulum) 430–440 μ .

Host: Gerbille, at Bothaville, Orange Free State (G. A. H. Bedford).

CAPARINIA TRIPILIS Michael.

The presence of a system of tracheal tubes in sarcoptid mites of the genus *Otodectes*, namely in *Otodectes cynotis* var. *cati* and var. *furonis*, has already been pointed out by the author (Journ. Quekett Micr. Club, vol. xiv. 1921, pp. 229 & 230, text-fig. 1). Tracheal tubes also occur in *Caparinia tripilis*, and are very similar in appearance to those present in *Otodectes cynotis*. A parently *Otodectes* and *Caparinia* are the only members of the family Sarcoptidae possessing a respiratory system of tracheal tubes; but further investigations on this subject are necessary.